**WHAT IS CLAIMED IS**:

1. A system for transmitting a high speed data stream over a plurality of twisted pair conductor comprising:

a high speed data interface adapted to receive said high speed data stream and to inversely multiplex said high speed data stream into a plurality of parallel data streams,

a framer adapted to receive one of said parallel data streams, and to generate a stream of packets, each packet having a packet index number, and

a plurality of modems adapted to modulate each corresponding stream of packets onto a twisted pair conductor.

2. The system of claim 1, wherein said framer is further adapted to generate said stream of packets, each packet having a stream number.

3. The system of claim 1, wherein the number of parallel data streams is fewer than twenty two.

4. The system of claim 1, wherein said high speed data stream is a DS3 data stream.

5. The system of claim 1, wherein said high speed data interface is adapted to inversely multiplex said high speed data stream into four parallel data streams.

6. The system of claim 1, further comprising a processor adapted to identify a loopback code in said high speed data stream.

7. The system of claim 6, wherein said processor is further adapted to pass through a first received loopback code, and to enter a loopback mode if an $n^{th}$ consecutive loopback code is received without an intervening loop down code.

8. The system of claim 1, further comprising at least one switch adapted to configure said system as a repeater unit or a non-repeater unit.

9. The system of claim 8, wherein said at least one switch is further adapted to configure said system as a west (LU) or east (RU) repeater unit.

10. The system of claim 8, wherein said at least one switch is further adapted to configure said system as a first repeater or a second repeater unit.

11. The system of claim 1, wherein said modems are adapted to modulate data into one of a high frequency band or a low frequency band based on a transmit direction.

12. The system of claim 1, further comprising a front panel having a high speed data stream interface, and a rear interface, said system being adapted to switch between said front panel interface and said rear interface based on a user input.

13. The system of claim 12, wherein said user input is an information bit in a back plane.

14. The system of claim 6, wherein said processor is further adapted to switch between an active mode and a standby mode.

15. The system of claim 14, wherein said system is adapted to perform protection switching.

16. The system of claim 15, wherein said protection switching is 1:1 protection switching.

17. The system of claim 1, further comprising an LED adapted to display a loss of signal status.

18. The system of claim 1, further comprising an LED adapted to display a loopback mode status.

19. The system of claim 1, further comprising an LED adapted to display a remote alarm status.

20. The system of claim 1, further comprising an LED adapted to display a normal operation status.

21. The system of claim 1, further comprising an LED adapted to display a standby mode status.

22. The system of claim 1, further comprising an LED adapted to display a system failure status.

23. The system of claim 1, further comprising an LED adapted to display a status of one of said plurality of parallel data streams.

24. The system of claim 23, further comprising a plurality of LED's adapted to display a loss of signal status corresponding to each of said plurality of parallel data streams.

25. A system for receiving a high speed data stream over a plurality of twisted pair conductor comprising:

a plurality of modems adapted to demodulate a plurality of parallel signals received over said plurality of twisted pair conductors into a plurality of data streams each comprising a stream of packets, each packet having a stream identifier and a packet number;

a deframer adapted to receive said parallel streams of packets, and to synchronize packets from said parallel streams based on said stream identifiers and packet numbers; and

a high speed data interface adapted to receive said plurality of synchronized parallel data streams and to multiplex said plurality of parallel data streams into said high speed data stream.

26. The system of claim 25, wherein said high speed data stream is a DS3 data stream.

27. The system of claim 25, wherein said high speed data interface is adapted to multiplex four parallel data streams into said high speed data stream.

28. The system of claim 25, further comprising a processor adapted to identify a loopback code in said high speed data stream.

29. The system of claim 28, wherein said processor is further adapted to pass through a first received loopback code, and to enter a loopback mode if an $n^{th}$ consecutive loopback code is received without an intervening loop down code.

30. The system of claim 25, further comprising at least one switch adapted to configure said system as a repeater unit or a non-repeater unit.

31. The system of claim 30, wherein said at least one switch is further adapted to configure said system as a west (LU) or east (RU) repeater unit.

32. The system of claim 30, wherein said at least one switch is further adapted to configure said system as a first repeater or a second repeater unit.

33. The system of claim 25, wherein said modems are adapted to demodulate data from one of a high frequency band or a low frequency band based on a transmit direction.

34. A method of transmitting a high speed data stream over a plurality of twisted pair conductor comprising:

receiving said high speed data stream;

inversely multiplexing said high speed data stream into a plurality of parallel data streams,

generating a stream of packets from each said parallel data stream, each packet having a stream identifier and a packet number, and

modulating each corresponding stream of packets onto a corresponding twisted pair conductor.

35. The method of claim 34, wherein said high speed data stream is a DS3 data stream.

36. The method of claim 34, wherein said step of inversely multiplexing said high speed data stream further comprising inversely multiplexing said high speed data stream into four parallel data streams.

37. The method of claim 34, further comprising the step of identifying a loopback code in said high speed data stream.

38. The method of claim 37, wherein said step of identifying a loopback code further comprising passing through a first received loopback code, and entering a loopback mode if an $n^{th}$ consecutive loopback code is received without an intervening loop down code.

39. The method of claim 34, wherein the value of n is based on a status as a repeater or non-repeater.

40. The method of claim 39, wherein the value of n is based on a status as a west (LU) or east (RU) repeater unit.

41. The method of claim 39, wherein the value of n is based on a status as a first repeater or a second repeater unit.

42. The method of claim 34, wherein said modulating step further comprises modulating data into one of a high frequency band or a low frequency band based on a transmit direction.